

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (*Currently amended*) An aerial imaging system comprising:
 - a image storage medium locatable within an aircraft;
 - a controller that controls the collection of image data and stores it in the storage medium; and
 - a camera assembly that collects image data from a region to be imaged and inputs it to the controller, the camera assembly comprising at least one multiple camera module having a rigid frame mounting block containing a plurality of parallel lens cavities in ~~each of which a camera lens is~~ lenses are mounted and focused on the same field of view, and a plurality of imaging photodetectors, each aligned to receive light from ~~a different one of the camera lenses.~~
2. (*Currently amended*) An imaging system according to Claim 1 wherein the ~~frame~~ mounting block comprises a monolithic block of material.
3. (*Currently amended*) An imaging system according to Claim 1 further comprising a plurality of filter elements each of which filters light collected by a ~~different one of the lenses, wherein each of the filter elements has a different filter wavelength band~~ lens.
4. (*Currently amended*) An imaging system according to Claim 3 further comprising a filter retainer on which the filter elements are mounted, the filter retainer being attachable to the ~~camera module frame~~ mounting block so as to position the filter elements adjacent to their respective lenses.

5. *(Currently amended)* An imaging system according to Claim 4 wherein an airtight seal exists between the filter retainer and the ~~camera module frame~~ mounting block.
6. *(Currently amended)* An imaging system according to Claim 5 wherein a vacuum exists between the filter retainer and the ~~camera module frame~~ mounting block.
7. *(Currently amended)* An imaging system according to Claim 4 further comprising a ~~dessicant~~ desiccant located between the filter retainer and the ~~camera module frame~~ mounting block.
8. *(Currently amended)* An imaging system according to Claim 1 further comprising a fixture on which the imaging photodetectors are mounted, the fixture being attachable to the ~~camera module frame~~ mounting block so as to position the imaging photodetectors adjacent to their respective lenses.
9. *(Previously presented)* An imaging system according to Claim 8 further comprising a serial data path connected to the imaging photodetectors that meets standard IEEE 1394.
10. *(Previously presented)* An imaging system according to Claim 1 wherein the fields of view of the lenses are measured in a calibration, and wherein the controller subsequently compensates for discrepancies in the fields of view during a post-processing phase.
11. *(Previously presented)* An imaging system according to Claim 1 further comprising an inertial measurement unit that detects acceleration and rotation rates of the camera assembly and provides an input signal to the controller indicative thereof.

12. (*Previously presented*) An imaging system according to Claim 11 wherein the signal from the inertial measurement unit is used by the controller in triggering collection of the imaging data.
13. (*Previously presented*) An imaging system according to Claim 11 wherein discrepancies between the signal from the inertial measurement unit and image data collected by the camera assembly is measured in a calibration, and wherein the controller subsequently compensates for the discrepancies in a post-processing phase.
14. (*Previously presented*) An imaging system according to Claim 1 wherein the camera assembly is a first camera assembly, and wherein the system comprises a plurality of camera assemblies, each having its own set of lenses.
15. (*Previously presented*) An imaging system according to Claim 14 wherein the lenses of different camera assemblies have different fields of view.
16. (*Previously presented*) An imaging system according to Claim 14 wherein the lenses of different camera assemblies have the same field of view.
17. (*Previously presented*) An imaging system according to Claim 1 further comprising an aerodynamic pod on the outside of the aircraft within which the camera assembly is located.
18. (*Currently amended*) An aerial imaging system comprising:
 - a image storage medium locatable within an aircraft;
 - a controller that controls the collection of image data and stores it in the storage medium;
 - a camera assembly that collects image data from a region to be imaged and inputs it to the controller, the camera assembly comprising a plurality of

camera lenses, and a plurality of imaging photodetectors, each aligned to receive light from a ~~different~~ one of the camera lenses; and

a data collection apparatus via which data is collected from the photodetectors by the controller, the data collection apparatus comprising a serial data path that connects to each of the photodetectors.

19. *(Previously presented)* An imaging system according to Claim 18 wherein the serial data path meets standard IEEE 1394.
20. *(Previously presented)* An imaging system according to Claim 18 further comprising a data hub to which each of the photodetectors connects, the data hub having an additional connection via which it may be connected to an additional data hub.
21. *(Previously presented)* An imaging system according to Claim 20 wherein the camera assembly is a first camera assembly, and wherein the system comprises a plurality of camera assemblies, each having its own set of lenses and its own set of photodetectors connected to a data hub specific to that camera assembly, and wherein the data hubs may be connected together via an additional connection on each data hub so as to created a single serial data path.
22. *(Currently amended)* An aerial imaging system comprising:
 - a image storage medium locatable within an aircraft;
 - a controller that controls the collection of image data and stores it in the storage medium;
 - a camera assembly that collects image data from a region to be imaged and inputs it to the controller, the camera assembly comprising at least one multiple camera module having a ~~rigid frame~~ mounting block containing a plurality of parallel lens cavities in each of which a camera lens is mounted, and a plurality of imaging photodetectors, each aligned to receive light from a ~~different~~ one of the camera lenses; and

an optical filter assembly comprising a plurality of optical filters each of which filters light prior to its collection by ~~a different~~ one of the lenses, the filter assembly further comprising a retainer within which each of the filters is mounted, the retainer being located adjacent to the camera assembly frame so that each filter filters light from its respective lens.

23. (*Previously presented*) An imaging system according to Claim 22 wherein each of the filters has a different filter wavelength band.
24. (*Currently amended*) An imaging system according to Claim 22 wherein an airtight seal exists between the filter retainer and the ~~camera module frame~~ mounting block.
25. (*Currently amended*) An imaging system according to Claim 24 wherein a vacuum exists between the filter retainer and the ~~camera module frame~~ mounting block.
26. (*Currently amended*) An imaging system according to Claim 22 further comprising a ~~dessicant~~ desiccant located between the filter retainer and the ~~camera module frame~~ mounting block.
27. (*Currently amended*) An imaging system according to Claim 22 wherein the camera module is a first camera module and the system comprises a plurality of camera modules, each having its own set of lenses and its own set of photodetectors, and wherein the optical filter assembly is a first optical filter assembly and the system comprises a plurality of optical filter assemblies, each having a retainer located adjacent to a respective ~~one of the camera assembly frames~~ mounting block.
28. (*Previously presented*) An imaging system according to Claim 22 wherein at least one of the filters has a pass band in the infrared wavelength range.

29. *(Previously presented)* An imaging system according to Claim 22 wherein a plurality of the filters has a pass band in the infrared wavelength range.
30. *(Currently amended)* A method of conducting aerial imaging, the method comprising:
- providing an a image storage medium locatable within an aircraft;
 - collecting image data from a region to be imaged with a camera assembly and generating an image data output, the camera assembly comprising at least one multiple camera module having a ~~rigid frame~~ mounting block containing a plurality of parallel lens cavities in ~~each of which a camera lens is~~ lenses are mounted and focused on the same field of view, and a plurality of imaging photodetectors, each aligned to receive light from a different one of the camera lenses;
 - controlling a collection of image data with a controller that receives the image data output and stores the image data in the storage medium; and
 - filtering light prior to its collection by the camera assembly using an optical filter assembly comprising a plurality of optical filters each of which filters light for a different one of the lenses, and wherein at least one of the filters has a filter band in the visible range and at least one of the filters has a filter band in the near-infrared range.
31. *(New)* An imaging system according to Claim 3 wherein each of said filter elements has a different filter wavelength band.
32. *(New)* A camera apparatus that collects image data from a region to be imaged, the apparatus comprising:
- a multiple camera module having a mounting block containing a plurality of parallel lens cavities in any number of which a camera lens is mounted and focused on the same field of view; and

a plurality of imaging photodetectors, each aligned to receive light from one of the camera lenses.

33. (New) The camera apparatus of claim 32 containing two or more camera modules, each oriented in a different direction, and each having four cameras mounted in a square pattern.
34. (New) An apparatus according to Claim 32 wherein the frame comprises a monolithic block of material.
35. (New) An apparatus according to Claim 32 further comprising a plurality of filter elements each of which filters light collected by one of the lenses.
36. (New) An apparatus according to Claim 35 wherein each said filter elements has a different filter wavelength band.
37. (New) An apparatus according to Claim 35 further comprising a filter retainer on which the filter elements are mounted, the filter retainer being attachable to the mounting block so as to position the filter elements adjacent to their respective lenses.
38. (New) An apparatus according to Claim 37 wherein an airtight seal exists between the filter retainer and the mounting block
39. (New) An apparatus according to Claim 38 wherein a vacuum exists between the filter retainer and the mounting block.
40. (New) An apparatus according to Claim 37 further comprising a desiccant located between the filter retainer and the mounting block.

41. (New) An apparatus according to Claim 35 wherein at least one of the filters has a pass band in the infrared wavelength range.
42. (New) An apparatus according to Claim 35 wherein a plurality of the filters has a pass band in the infrared wavelength range.
43. (New) An apparatus according to Claim 32 further comprising a fixture on which the imaging photodetectors are mounted, the fixture being attachable to the camera mounting block so as to position the imaging photodetectors adjacent to their respective lenses.
44. (New) An apparatus according to Claim 32 wherein the multiple camera module is a first multiple camera module, and wherein the system comprises a plurality of multiple camera modules, each having its own set of lenses.
45. (New) An apparatus according to Claim 44 wherein the lenses of different camera modules have different fields of view.
46. (New) An apparatus according to Claim 44 wherein the lenses of different camera modules have the same field of view.
47. (New) A camera apparatus according to Claim 32 further comprising a data collection apparatus via which data is collected from the photodetectors, the data collection apparatus comprising a serial data path that connects to each of the photodetectors.
48. (New) An apparatus according to Claim 47 wherein the serial data path meets standard IEEE 1394.

49. (New) An apparatus according to Claim 47 further comprising a data hub to which each of the photodetectors connects, the data hub having an additional connection via which it may be connected to an additional data hub.
50. (New) An apparatus according to Claim 49 wherein the multiple camera module is a first multiple camera module, and wherein the system comprises a plurality of multiple camera modules, each having its own set of lenses and its own set of photodetectors connected to a data hub specific to that camera assembly, and wherein the data hubs may be connected together via an additional connection on each data hub so as to created a single serial data path.
51. (New) A method of collecting image data from a region to be imaged, the method comprising:
- imaging the region to be imaged with a camera assembly comprising a plurality of camera lenses and a plurality of imaging photodetectors each aligned to receive light from one of the camera lenses; and
 - coupling the imaged data from each of the photodetectors to a serial data path that connects to each of the photodetectors.
52. (New) A method according to Claim 51 wherein the serial data path meets standard IEEE 1394.
53. (New) A method according to Claim 51 further comprising a data hub to which each of the photodetectors connects, the data hub having an additional connection via which it may be connected to an additional data hub.
54. (New) A method according to Claim 51 wherein the camera assembly comprises at least one multiple camera module having a rigid frame containing a plurality of parallel lens cavities in each of which one of the camera lenses is mounted and focused on the same field of view.

55. (New) A method according to Claim 54 wherein the multiple camera module is a first multiple camera module, and wherein the system comprises a plurality of multiple camera modules, each having its own set of lenses and its own set of photodetectors connected to a data hub specific to that camera assembly, and wherein the data hubs may be connected together via an additional connection on each data hub so as to create a single serial data path.
56. (New) A method according to Claim 51 further comprising filtering light collected by the camera assembly using a plurality of optical filters each of which filters light prior to its collection by a different one of the lenses.
57. (New) A method according to Claim 56 wherein each of the filters has a different filter wavelength band.
58. (New) A method according to Claim 56 wherein at least one of the filters has a pass band in the infrared wavelength range.
59. (New) A method according to Claim 56 wherein a plurality of the filters has a pass band in the infrared wavelength range.
60. (New) An aerial imaging system comprising:
a digital storage medium;
a controller that controls the collection of image data and stores it in the storage medium; and
a camera assembly that collects image data from a region to be imaged and inputs it to the controller, the camera assembly comprising at least one multiple camera module having a mounting block containing a plurality of parallel lens cavities in any number of which a camera lens is mounted and focused on the same field of view, and a plurality of imaging photodetectors, each aligned to receive light from a different one of the camera lenses.

61. (New) An aerial imaging system comprising:
- a digital storage medium;
 - a controller that controls the collection of image data and stores it in the storage medium;
 - a camera assembly that collects image data from a region to be imaged and inputs it to the controller, the camera assembly comprising a plurality of camera lenses, and a plurality of imaging photodetectors, each aligned to receive light from one of the camera lenses; and
 - a data collection apparatus via which data is collected from the photodetectors by the controller, the data collection apparatus comprising a serial data path that connects to each of the photodetectors.